

10/577630
AP20 Rec'd PCT/PTO 26 APR 2006

CLAIMS:

1. A treatment apparatus of waste water containing oil and fat for a grease trap which is mounted on the grease trap and decomposes and treats waste oil and fat in the waste water containing oil and fat within the grease trap by use of an immobilized enzyme, said treatment apparatus comprising a support plate mounted on the grease trap, an immobilized enzyme holder containing an immobilized enzyme through which waste water containing oil and fat can freely pass, and agitating means for agitating waste water containing oil and fat, wherein said immobilized enzyme holder and said agitating means are installed on said support plate.

2. The treatment apparatus of waste water containing oil and fat for a grease trap as claimed in Claim 1, in which an immobilized enzyme holder is a net body in a cylindrical shape.

3. The treatment apparatus of waste water containing oil and fat for a grease trap as claimed in Claim 2, in which the mesh size of the net body is in the range from 8 to 14 mesh, and the average particle diameter of an immobilized enzyme is in the range from 1 to 8 mm.

4. The treatment apparatus of waste water containing oil and fat for a grease trap as claimed in Claims 3, in which agitating means agitates so that waste oil and fat in waste water containing oil and fat and water are uniformly mixed.

5. The treatment apparatus of waste water containing oil and fat for a grease trap as claimed in Claim 4, in which at least one agitating means is installed at the position neighboring to one or two immobilized enzyme holder(s).

6. The treatment apparatus of waste water containing oil and fat for a grease trap as claimed in Claim 5, in which the amount of waste oil and fat in waste water containing oil and fat after the decomposition treatment by an enzyme is 500 mg/L or less in the n-hexane extract content by a method described in the column of hexane extraction substances described in JIS K0102:1998-24.

7. The treatment apparatus of waste water containing oil and fat for a grease trap as claimed in Claim 6, in which heating means for heating waste water containing oil and fat is provided.

8. A higher fatty acid and glycerin obtained by a decomposition treatment by an immobilized enzyme using a treatment apparatus of waste water containing oil and fat for a grease trap claimed in Claim 1.

9. A grease trap equipped with a flow input pipe and a flow output pipe for removing waste oil and fat by accumulating waste water containing oil and fat flown from said flow input pipe, wherein a support plate is provided on the upper portion of said grease trap, said support plate being provided with an immobilized enzyme holder containing an immobilized enzyme and through which waste water containing oil and fat and water can freely pass and agitating means for agitating so that waste oil and fat in waste water containing oil and fat and water are uniformly mixed, thereby decomposing and treating waste oil and fat in waste water containing waste oil and fat by an immobilized enzyme.

10. The grease trap as claimed in Claim 9, in which at least one agitating means is installed at the position neighboring to one or two immobilized enzyme holder(s).

11. The grease trap as claimed in Claim 10, in which an immobilized enzyme holder is a net body in a cylindrical shape.

12. The grease trap as claimed in Claim 11, in which the mesh size of the net body is in the range from 8 to 14, and the average particle diameter of an immobilized enzyme is in the range from 1 to 8 mm.

13. The grease trap as claimed in Claim 12, in which the amount of waste oil and fat in waste water containing oil and fat after the decomposition treatment by an enzyme is 500 mg/L or less in the n-hexane extract content by a method described in the column of hexane extraction substance described in JIS K0102: 1998-24.

14. The grease trap as claimed in Claim 13, in which heating means for heating waste water containing oil and fat is provided.

15. A higher fatty acid and glycerin obtained by a decomposition treatment by an immobilized enzyme using the treatment apparatus of waste water containing oil and fat for a grease trap claimed in Claims 9.